



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,625	06/25/2003	Theodore M. Boyd-Davis	BING-1-1004	5054
60483	7590	10/04/2006	EXAMINER	
LEE & HAYES, PLLC 421 W. RIVERSIDE AVE. SUITE 500 SPOKANE, WA 99201			TALBOT, MICHAEL	
			ART UNIT	PAPER NUMBER
			3722	

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/606,625

Applicant(s)

BOYL-DAVIS ET AL.

Examiner

Michael W. Talbot

Art Unit

3722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 August 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-13,15,16,18-26,28-31 and 33-48 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,2,4-13,15,16,18-26,28-31 and 33-48 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 20 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 07/14/06.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,2,4,6,8-12,15,16,18,20,22-25,28-31,33 and 35-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Cable et al. '542. Cable et al. '542 shows in Figures 1-6 an apparatus comprising a track assembly adapted to be attached to a work piece (15) via vacuum cups (31) including at least one rail (18) having a longitudinally-extending neutral axis and an integrally-formed rack (10) with a plurality of tapered/wedge-shaped apertures (23) extending along a pitch line that at least approximates the longitudinally-extending neutral axis. Cable et al. '542 shows the track being substantially flat and having a width substantially greater than a thickness causing a stiffer bending moment that extends along the thickness direction and a more pliable bending moment that extends along the width direction. Cable et al. '542 shows a carriage (11,32,40) including a drive assembly having an x-axis portion (11,32) being moveably (col. 2, lines 38-51) coupled to the track assembly (via wheels 30) and moveable relative to the translational axis (x-axis) via a drive motor (33) coupled to a drive gear (24) engaging the rack (col. 2, line 65 through col. 3, line 4) and a y-axis portion (40) slideably coupled to the x-axis portion and moveable with respect to the x-axis portion along a y-axis oriented transversely to the track assembly (must move vertically as viewed in Fig. 5 in order to cut/weld the work surface 15). Cable et al. '542 shows the drive gear having a plurality of teeth operatively engaging apertures of the rack wherein the apertures are adapted to match a cross-sectional profile of the teeth (col. 2, lines 52-64). Cable et al. '542 shows the carriage

Art Unit: 3722

supporting a manufacturing tool (11) to perform the manufacturing operation of cutting the work piece (col. 3, lines 7-11).

With regards to claims 1,15 and 29, it has been held that a recitation that an element is "adapted to" perform a particular function is not a positive limitation and must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In the above references, the track is capable of being affixed to the work piece and the manufacturing tool is capable of performing an operation on the work piece.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7,21 and 43-48 are rejected under 35 U.S.C. 103(a) as being obvious over Cable et al. '542. Cable et al. '542 discloses the claimed invention except for the presence of two rails. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include two rails oriented parallel to one another in lieu of a single rail for the purpose of enhancing the capacity of the manufacturing operations performed by the apparatus because it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

5. Claims 1,2,4-7,10,13,15,16,18-20,26,28-31,33,34,36 and 38-42 are rejected under 35 U.S.C. 103(a) as being obvious over Adams '436. Adams '436 shows in Figures 1-5b an apparatus comprising a track assembly (11) adapted to the work piece (12,14) via fasteners

Art Unit: 3722

(28) and mounting steps (25) and vacuum pads (29) including at least one rail having an integrally-formed rack with a plurality of apertures (157) extending along a pitch line that at least approximates the longitudinally-extending neutral axis. Adams '436 shows the track being substantially flat and having a width substantially greater than a thickness causing a stiffer bending moment that extends along the thickness direction and a more pliable bending moment that extends along the width direction. Adams '436 shows a carriage (15,20,24) with an x-axis portion (15) including a tool support (62 in Fig. 17) adapted to receive a manufacturing drill tool (17) moveably (col. 3, lines 20-27) coupled to the track assembly and moveable relative to the translational axis (x-axis), a y-axis portion (20,24) slideably coupled to the x-axis portion and moveable with respect to the x-axis portion along a y-axis oriented transversely to the track assembly (must move vertically as viewed in Figs. 7 and 8 in order to located latch mechanism within a previously drilled hole), and an opposing-force support assembly (22) coupled to the carriage and adapted to be secured to the work piece to at least partially counterbalance a manufacturing force exerted on the work piece by the manufacturing tool (col. 3, lines 20-37). Adams '436 shows the carriage including a drive assembly (144,145,147) having a drive motor (144) operatively engaging the track and adapted to drive the carriage along the track (col. 7, line 73 through col. 8, line 38).

With regards to claims 1,15 and 29, it has been held that a recitation that an element is "adapted to" perform a particular function is not a positive limitation and must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In the above references, the track is capable of being affixed to the work piece and the manufacturing tool is capable of performing an operation on the work piece.

Adams '436 does not disclose expressly that the plurality of apertures are tapered, wedge or conically shaped. Instead, Adams '436 is silent to the shape of the plurality of apertures. At the time of the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to select a tapered, wedge or conically shaped apertures because Applicant has not disclosed that the tapered, wedge or conically shaped apertures provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the apparatus of Adams '436, and Applicant's apparatus to perform equally well with either the silent shape taught by Adams '436 or the claimed tapered, wedge or conically shaped apertures because all three shapes provide the necessary space for engagement with the drive member.

Furthermore, Applicant does not provide any criticality or unexpected results for the plurality of apertures having a tapered, wedge or conical shape as recited in claims 1,4,15,18,19 and 34.

### ***Response to Arguments***

6. Applicant's arguments filed 03 August 2006 have been fully considered but they are not persuasive.

Examiner respectfully disagrees with Applicant's arguments that the Cable et al. '542 and Adams '436 references cited above do not teach "a carriage comprising an x-axis portion moveably coupled to the track assembly and moveable relative to the workpiece along the rail, and a y-axis portion slideably coupled to the x-axis portion and moveable with respect to the x-axis portion along a y-axis oriented transversely to the track assembly". The claims are broadly written to permit any component coupled to the carriage to be selected as an x-axis portion (as it moves along with the carriage along the work surface in the x-axis direction) and any component coupled to the carriage (which therefore is coupled the x-axis portion), moving in a

Art Unit: 3722

transverse direction (simply toward and/or away from the work surface), can be selected as the y-axis portion, and therefore meet all the limitation of the claim.

7. Applicant's arguments, see pages 14-15, filed 03 August 2006, with respect to claims 1,2,4 and 6 under 35 U.S.C. 102(b) and claim 7 under 35 U.S.C. 103(a) regarding the Olsen '126 reference have been fully considered and are persuasive. Therefore the rejection of claims 1,2,4,6 and 7 with respect to the Olsen '126 reference has been withdrawn.

Applicant's arguments, see pages 15-16, filed 03 August 2006, with respect to claims 1,2,4 and 6 under 35 U.S.C. 102(b) and claim 7 under 35 U.S.C. 103(a) regarding the Zeldman '536 reference have been fully considered and are persuasive. Therefore the rejection of claims 1,2,4,6 and 7 with respect to the Zeldman '536 reference has been withdrawn.

Applicant's arguments, see pages 16-17, filed 03 August 2006, with respect to claims 1,2,5 and 6 under 35 U.S.C. 102(b) and claim 7 under 35 U.S.C. 103(a) regarding the Brock et al. '865 reference have been fully considered and are persuasive. Therefore the rejection of claims 1,2,5,6 and 7 with respect to the Brock et al. '865 reference has been withdrawn.

Applicant's arguments, see pages 16-17, filed 03 August 2006, with respect to claims 1,2,4,6-12,13,15,16,18-25,28-31,33-40 and 43-48 under 35 U.S.C. 103(a) regarding the Boyl-Davis et al. '328 reference and with respect to claims 13,26,41 and 42 under 35 U.S.C. 103(a) regarding the Boyl-Davis et al. '328 in view of Adams '436 references have been fully considered and are persuasive. Applicant has successfully shown "common ownership". Therefore the rejection of claims 1,2,4,6-12,13,15,16,18-26,28-31,33-48 with respect to the Boyl-Davis et al. '328 and the Boyl-Davis et al. '328 in view of Adams '436 references has been withdrawn.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning the content of this communication from the examiner should be directed to Michael W. Talbot, whose telephone number is 571-272-4481. The examiner's office hours are typically 8:30am until 5:00pm, Monday through Friday. The examiner's supervisor, Mrs. Monica S. Carter, may be reached at 571-272-4475.

In order to reduce pendency and avoid potential delays, group 3720 is encouraging FAXing of responses to Office Actions directly into the Group at FAX number 571-273-8300. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers, which require a fee, by applicants who authorize charges to a USPTO deposit account. Please identify Examiner Michael W. Talbot of Art Unit 3722 at the top of your cover sheet.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished



Art Unit: 3722

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



MWT  
Examiner  
28 September 2006

  
MONICA CARTER  
SUPERVISORY PATENT EXAMINER